Glucose Smart Monitoring   (GeeSeM)

Introduction:

The past weeks, we have delved into the experience of the NICoLLa project, that was created by different universities from Holland, Finland, Spain and Portugal in which members from each involved university share their knowledge to came up with solutions which could improve the resources of healthcare professionals, as well as the experience of professionals and patients.

In addition to this we have been able to work together with students and teachers from other countries and cultures, so we have been involved in a very enriching experience which has allowed us to discover several interesting things and ways of working. Additionally, we dealt with the different timetables not only because of different time zones and different mealtimes.

Parallel that, we have acquired new knowledge of both fields, technology and healthcare. In our experience, we have been facing a challenge about diabetes, so healthcare students have explained to the rest what diabetes is and the problems they face in their routine as nurses, as well as ITC and engineering students talked about different technology, we can use to improve that routine. We are lucky that in our group we have met people from very different profiles, and we all have been involved and interested in participating, giving our opinion encourage us to develop a rather interesting solution while we have been able to learn a lot from our colleagues and teachers.

Our Project:

To begin with, we selected one topic that was our starting point. So we decided to develop a solution for diabetic elderly people. Due to the primitive way of measuring the glucose levels and that elderly people are not usually skilled in new technology, we decided to develop a continuous and automatic solution that sends all the information to a doctor with a Bluetooth patch.

To continue, we decided the gadgets that we could add, to make the patient's experience better. First, we determined adding an android based smartwatch that would be sending all the information to a server that will be operating the data with the purpose of getting personalized results to the user. Then we added a voice assistance created through a raspberry pi, this device will be communicating with the patient and will enable him or her to do videocalls with the doctors, using a small camera connected on the voice assistance. Finally, we focused on developing a phone app that will make the work easier for nurses, doctors and relatives of the patients, with this app, the user could see how the glucose levels are of the patient on that moment, as well as the last reports of the users. Using the app enables the user to see all the data quickly, using different graphs and diagrams.

In conclusion, thanks to our work and the acquired knowledge we have been able to develop a better solution that helps diabetic seniors to have a better life.

Author description:

· ICT personal

Rafael Jorge Carbonell Gisbert (Spain): Computer Engineering student. Technician in microcomputer systems and networks. Technician in Development of Multiplatform Applications.
Jordi Soler Sierra (Spain): Computer Engineering student. Technician in microcomputer systems and networks. Technician in Development of Multiplatform Applications.
Isabel Ferri Mollá (Spain): Computer Engineering student. She is specializing on technology of information. Currently doing a double degree with software engineering in Lahti.
Jorge Martínez Bernat (Spain): Computer Engineering student. Currently specializing in industry 4.0.

· Mechanical personal

Ram Pokhrel (Nepal): Mechanical Engineering student. Specialization on project management, research & Planning, Technical documentation, Design and industrial automation.

· Healthcare personal

Eric Ndayishimiye (Rwanda): Healthcare student. Studying to become registered nurse and very much interested in pain management.
Yahya Shatila (Lebanon): Social and Healthcare student. He is interested in diabetes and mental health patients